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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/434,404	11/05/1999	ATSUSHI MATSUMOTO	862.3194	3919

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EXAMINER

POKRZYWA, JOSEPH R

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/434,404

Applicant(s)

MATSUMOTO ET AL.

Examiner

Joseph R. Pokrzywa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/2/05 has been entered.

Response to Amendment

2. Applicant's amendment received on 2/28/05 has been entered and made of record. Currently, **claims 1-17, and 26** are pending.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-4, 7-17, and 26** are rejected under 35 U.S.C. 102(e) as being anticipated by Yhann (U.S. Patent Number 6,639,593).

Regarding *claim 1*, Yhann discloses an image processing apparatus (column 7, line 48-column 8, line 43), comprising generation means for generating a bitmap image on the basis of inputted object data (step 204 in Fig. 2A), hold means for holding attribute information representing a plurality of different types of attributes of the inputted object data in units of pixels of a bitmap image generated by the generation means (step 218 in Fig. 2B, column 4, line 31-column 5, line 10), the attribute information being formed by allocating plural bits of each pixel of the bitmap image (steps 208-216 in Figs. 2A-2B, column 4, line 31-column 5, line 50), conversion means for converting the bitmap image generated by the generation means into data capable of being processed by an image output unit (see abstract, and column 1, lines 6-column 2, line 62), and switch means for switching the contents of processing for each pixel of the bitmap image in the conversion means on the basis of a combination of the plurality of different types of attributes represented by the attribute information held by the hold means (see abstract, step 226 in Fig. 2B, column 4, line 65-column 5, line 59, and column 6, line 10-column 7, line 34).

Regarding *claim 2*, Yhann discloses the apparatus discussed above in claim 1, and further teaches that the holding means holds an attribute map in which the attribute information is arranged for each pixel corresponding to a two-dimensional coordinate position of the bitmap image (column 4, line 31-column 5, line 10, and column 8, lines 13-43).

Regarding *claim 3*, Yhann discloses the apparatus discussed above in claim 1, and further teaches that the holding means embeds the attribute information into bits of a part of each pixel data of the bitmap image (steps 208-216 in Figs. 2A-2B, column 4, line 31-column 5, line 50).

Regarding **claim 4**, Yhann discloses the apparatus discussed above in claim 1, and further teaches that the attribute information includes information representing whether object data corresponding thereto has the form of bitmap data or the form of vector data (column 7, line 19-column 8, line 43).

Regarding **claim 7**, Yhann discloses the apparatus discussed above in claim 1, and further teaches that the attribute information is configured by a plurality of bits (column 4, lines 5-64), and the switch means switches the contents of processing of the conversion means in accordance with a combination of ON/OFF states of each bit (column 7, line 19-column 8, line 43).

Regarding **claim 8**, Yhann discloses the apparatus discussed above in claim 7, and further teaches that each bit of the attribute information represents an independent attribute (column 7, line 19-column 8, line 43).

Regarding **claim 9**, Yhann discloses the apparatus discussed above in claim 7, and further teaches that the attribute information contains a bit group representing a specific attribute using a plurality of bits (column 5, line 11-column 6, line 52).

Regarding **claim 10**, Yhann discloses the apparatus discussed above in claim 1, and further teaches that the object data is represented by page description language (column 7, lines 19-34).

Regarding **claim 11**, Yhann discloses a storage medium for storing a control program for image processing (column 7, line 48-column 8, line 43), the control program comprising codes for a generation process for generating a bitmap image on the basis of object data inputted (step 204 in Fig. 2A), codes of a holding process for holding attribute information representing a plurality of different types of attributes of the inputted object data in units of pixels of a bitmap

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image generated in the generation process for holding in a memory (step 218 in Fig. 2B, column 4, line 31-column 5, line 10), the attribute information being formed by allocating plural bits of each pixel of the bitmap image (steps 208-216 in Figs. 2A-2B, column 4, line 31-column 5, line 50), codes of a conversion process for converting the bitmap image generated in the generation process into data capable of being processed by an image output unit (see abstract, and column 1, lines 6-column 2, line 62), and codes of a switching process for switching the contents of processing for each pixel of the bitmap image in the conversion process on the basis of a combination of the plurality of different types of attributes represented by the attribute information held by the holding process (see abstract, step 226 in Fig. 2B, column 4, line 65-column 5, line 59, and column 6, line 10-column 7, line 34).

Regarding *claim 12*, Yhann discloses an image processing system (column 7, line 48-column 8, line 43) having a host device and an image output unit (column 7, lines 48-66), comprising means for generating a bitmap image on the basis of inputted object data (step 204 in Fig. 2A), means for holding attribute information representing a plurality of different types of attributes of the inputted object data in units of pixels of a bitmap image generated by the generation means (step 218 in Fig. 2B, column 4, line 31-column 5, line 10), the attribute information being formed by allocating plural bits of each pixel of the bitmap image (steps 208-216 in Figs. 2A-2B, column 4, line 31-column 5, line 50), means for converting the bitmap image generated by the generation means into data capable of being processed by an image output unit (see abstract, and column 1, lines 6-column 2, line 62), and means for switching the contents of processing for each pixel of the bitmap image in the conversion means on the basis of a combination of the plurality of different types of attributes represented by the attribute

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information held by the hold means (see abstract, step 226 in Fig. 2B, column 4, line 65-column 5, line 59, and column 6, line 10-column 7, line 34).

Regarding *claim 13*, Yhann discloses the system discussed above in claim 12, and further teaches that the attribute information includes information organized hierarchically (column 5, line 21-column 6, line 52), and wherein there are one or more units of attribute information of low order concept which is subordinate to that of high order concept (column 5, line 21-column 6, line 52, and column 7, line 48-column 8, line 43).

Regarding *claim 14*, Yhann discloses the system discussed above in claim 12, and further teaches that the attribute information contains information representing whether object data corresponding thereto represents a monochrome or a color object (column 8, lines 13-43).

Regarding *claim 15*, Yhann discloses the system discussed above in claim 12, and further teaches that the attribute information contains information representing whether object data corresponding thereto represents a character or any kind of object other than characters (column 8, lines 13-43).

Regarding *claim 16*, Yhann discloses the system discussed above in claim 12, and further teaches that the attribute information contains information representing whether it has a single bit or a plurality of bit strings (column 8, lines 13-43) and whether or not it is a ground, and wherein the conversion means omits processing for a pixel which is a ground (column 7, line 19-column 8).

Regarding *claim 17*, Yhann discloses an image processing method (see Figs. 2A-2B), comprising the steps of generating a bitmap image on the basis of object data inputted (step 204 in Fig. 2A), holding in a memory attribute information representing a plurality of different types

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of attributes of the inputted object data in units of pixels of a bitmap image generated in the generating step (step 218 in Fig. 2B, column 4, line 31-column 5, line 10), the attribute information being formed by allocating plural bits of each pixel of the bitmap image (steps 208-216 in Figs. 2A-2B, column 4, line 31-column 5, line 50), converting the bitmap image generated in the generating step into data capable of being processed by an image output unit (see abstract, and column 1, lines 6-column 2, line 62), and switching the contents of processing for each pixel of the bitmap image in the converting step on the basis of a combination of the plurality of different types of attributes represented by the attribute information held in the holding step (see abstract, step 226 in Fig. 2B, column 4, line 65-column 5, line 59, and column 6, line 10-column 7, line 34).

Regarding *claim 26*, Yhann discloses an image processing apparatus (column 7, line 48-column 8, line 43), comprising a bitmap image generator, arranged to receive inputted object data and to produce a corresponding bitmap image (step 204 in Fig. 2A), a data holding unit, arranged to receive and to hold attribute information representing a plurality of different types of attributes of the inputted object data in units of pixels of the bitmap image generated by the bitmap image generator (step 218 in Fig. 2B, column 4, line 31-column 5, line 10), the attribute information being formed by allocating plural bits of each pixel of the bitmap image (steps 208-216 in Figs. 2A-2B, column 4, line 31-column 5, line 50), a converter adapted to convert the bitmap image generated by the bitmap image generator into data capable of being processed by an image output unit (see abstract, and column 1, lines 6-column 2, line 62), and a switch unit, adapted and arranged to switch the contents of processing for each pixel of the bitmap image in the converter on the basis of a combination of the plurality of different types of attributes

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represented by the attribute information held by the data holding unit (see abstract, step 226 in Fig. 2B, column 4, line 65-column 5, line 59, and column 6, line 10-column 7, line 34).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yhann (U.S. Patent Number 6,639,593) in view of Fukaya (U.S. Patent Number 6,275,303, cited in the Office action dated 12/28/04).

Regarding **claim 5**, Yhann discloses the apparatus discussed above in claim 1, but fails to expressly disclose if the conversion means includes processing for converting a bitmap image generated by the generation means into binary data using a dither matrix, and the switching means changes the dither matrix used in the conversion means on the basis of the attribute information.

Fukaya discloses an image processing apparatus (printer 120, seen in Fig. 1), comprising means for generating a bitmap image on the basis of inputted object data (column 1, lines 23 through 51, and column 6, line 25 through column 7, line 26), means for holding attribute information representing a plurality of different types of attributes of the inputted object data in units of pixels of a bitmap image generated by the generation means (column 6, line 46 through column 7, line 27), the attribute information being formed by allocating plural bits of each pixel

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of the bitmap image (column 7, lines 7 through 63), means for converting the bitmap image generated by the generation means into data capable of being processed by an image output unit (column 9, lines 9 through 61), and means for switching the contents of processing in the conversion means on the basis of a combination of the plurality of different types of attributes represented by the attribute information held by the hold means (column 6, lines 29 through 41, and column 9, line 62 through column 10, line 31).

Further, Fukaya teaches that the conversion means includes processing for converting a bitmap image generated by the generation means into binary data using a dither matrix (column 6, lines 25 through 41, and column 8, line 1 through column 9, line 45), and the switching means changes the dither matrix used in the conversion means on the basis of the attribute information (column 1, line 23 through column 2, line 6, column 6, lines 25 through 41, and column 9, lines 62 through 67).

Yhann & Fukaya are combinable because they are from the same field of endeavor, being systems that convert bitmap images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the dither matrix teachings of Fukaya within the system of Yhann. The suggestion/motivation for doing so would have been that Yhann's system would have an increased quality of the converted binary bitmap image, as recognized by Fukaya in column 1. Therefore, it would have been obvious to combine the teachings of Fukaya with the system of Yhann to obtain the invention as specified in claim 5.

Regarding *claim 6*, Yhann discloses the apparatus discussed above in claim 1, but fails to expressly disclose if the generation means generates a bitmap image based on RGB color space, the conversion means includes color conversion processing for converting each pixel data of the

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bitmap image into pixel data represented by YMCK color space, and the switch means changes an algorithm of the color conversion processing on the basis of the attribute information held by the holding means.

Fukaya discloses an image processing apparatus (printer 120, seen in Fig. 1), comprising means for generating a bitmap image on the basis of inputted object data (column 1, lines 23 through 51, and column 6, line 25 through column 7, line 26), means for holding attribute information representing a plurality of different types of attributes of the inputted object data in units of pixels of a bitmap image generated by the generation means (column 6, line 46 through column 7, line 27), the attribute information being formed by allocating plural bits of each pixel of the bitmap image (column 7, lines 7 through 63), means for converting the bitmap image generated by the generation means into data capable of being processed by an image output unit (column 9, lines 9 through 61), and means for switching the contents of processing in the conversion means on the basis of a combination of the plurality of different types of attributes represented by the attribute information held by the hold means (column 6, lines 29 through 41, and column 9, line 62 through column 10, line 31).

Further, Fukaya teaches that the generation means generates a bitmap image based on RGB color space (see Fig. 7, and column 6, lines 46 through 61, wherein color images transmitted to printer 120 would inherently be based on a RGB color space within the computer 110 so as that images are displayable), the conversion means includes color conversion processing for converting each pixel data of the bitmap image into pixel data represented by YMCK color space (column 7, lines 7 through 27, and column 9, lines 5 through 57), and the switch means changes an algorithm of the color conversion processing on the basis of the

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attribute information held by the holding means (column 1, line 23 through column 2, line 6, column 6, lines 25 through 41, and column 9, lines 62 through 67).

Yhann & Fukaya are combinable because they are from the same field of endeavor, being systems that convert bitmap images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the color conversion processing teachings of Fukaya within the system of Yhann. The suggestion/motivation for doing so would have been that Yhann's system would have an increased quality of converted color images, as recognized by Fukaya in columns 1 and 2. Therefore, it would have been obvious to combine the teachings of Fukaya with the system of Yhann to obtain the invention as specified in claim 6.

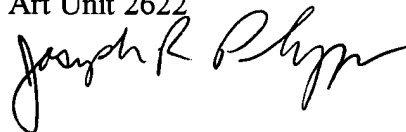
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joe Pokrzywa whose telephone number is (571) 272-7410. The examiner can normally be reached on Monday-Friday, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph R. Pokrzywa
Primary Examiner
Art Unit 2622



jrj